



Bruce Hammerberg



Immunology and Parasitology

Research emphasis:

Dr. Hammerberg's research shifted from the pathogenesis of lymphatic filariasis to the role of immunoglobulin E (IgE) in canine atopic dermatitis in the mid-1990s when his laboratory generated a heterohybridoma from canine B cells from nematode-infected lymph nodes that produced monoclonal canine IgE with specificity for a filarial nematode allergen. With this unique resource, monoclonal antibodies with very high affinity for canine IgE were developed to improve IgE-based diagnostic assays and to block IgE sensitization of basophils and mast cells for treatment of allergic diseases in dogs. Recombinant chimeras of single chain variable fragment antibodies directed at IgE B cells to induce anergy and/or apoptosis are in development.

Selected publications:

Woodward MC, Andrews FM, Kearney MT, Del Piero F, Hammerberg B, Pucheu-Haston CM. Characterization of IgE-mediated cutaneous immediate and late-phase reaction in nonallergic horses. *Am J Vet Res* 2014 Jul;75(7):663-41.

Seals SL, Kearney M, Del Piero F, Hammerberg B, Pusheu-Haston CM. A study for the characterization of IgE-mediated cutaneous immediate and late-phase reactions in non-allergic domestic cats. *Vet Immunol Immunopathol* 2014 May 15;159(1-2):41-9.

Pucheu-Haston CM, Kasperek KA, Stout RW, Kearney MT, Hammerberg B. Effects of pentoxifylline on immediate and late-phase cutaneous reactions in response to anti-immunoglobulin E antibodies in clinically normal dogs. *Am J Vet Res*. 2014 Feb;75(2):152-60.

Hammerberg B. Canine Immunoglobulin E. In: *Veterinary Allergy*. Eds. Chiara Noli, Aiden Foster, Wayne Rosenkrantz. John Wiley & Sons, Ltd. 2014. pp 8-15.

Application:

- Therapeutic monoclonal antibodies
- Allergic diseases of dogs, cats, horses
- IgE network-based diagnostics

Collaboration potential:

- IgE high affinity receptor function in immunomodulation
- IgE high affinity receptor function in neurological function

Professor of Immunology and Parasitology

DVM Michigan State University
MS – Biochemistry. Michigan State University
PhD – Microbiology. Michigan State University

Address:
North Carolina State University
Dept. Population Health and Pathobiology
1060 William Moore Drive
Raleigh, NC 27607

Phone: 919-513-7712
Email: bhammerb@ncsu.edu

<https://cvm.ncsu.edu/directory/hammerberg-bruce/m>